

IN THE CLAIMS

1. (Currently amended) A power supply system comprising:

a package housing;

a first ~~module~~ circuitry portion, located within the package housing, the first ~~module~~ circuitry portion comprising at least one first power conversion switch structured to perform power conversion switching to facilitate conversion of at least a first power input signal into a first power output signal; ~~and~~

a second ~~module~~ circuitry portion, located within the package housing, the second ~~module~~ circuitry portion comprising at least one second power conversion switch structured to perform power conversion switching to facilitate conversion of ~~a second~~ at least the first power input signal into a second power output signal;

a third circuitry portion, the third circuitry portion comprising at least one third power conversion switch structured to perform power conversion switching to facilitate conversion of at least the first power input signal into a third power output signal;

a fourth circuitry portion, the fourth circuitry portion comprising at least one fourth power conversion switch structured to perform power conversion switching to facilitate conversion of at least the first power input signal into a fourth power output signal;

further comprising a fifth circuitry portion, the fifth circuitry portion comprising at least one fifth power conversion switch structured to perform power conversion switching to facilitate conversion of the first power input signal into a fifth power output signal;

wherein all power conversion switches required for respectively converting the first power input signal into the first through fifth power output signals are located within the package housing.

Cancel claims 2-6.

7. (Currently amended) The system of claim 1 wherein:

the first power input signal is a dc signal;

the first power output signal is a dc signal;

~~the second power input signal is a dc signal; and~~

the second power output signal is a dc signal.

8. (Currently amended) The system of claim 1 wherein:

the first power input signal is a dc signal;

the first power output signal is an ac signal;

~~the second power input signal is a dc signal; and~~

the second power output signal is a dc signal.

9. (Original) The system of claim 1 wherein:

the at least one first power conversion switch is structured to perform ultra high efficiency power conversion; and

the at least one second power conversion switch is structured to perform ultra high efficiency power conversion.

10. (Original) The system of claim 1 wherein:

the at least one first power conversion switch is structured to perform high efficiency power conversion; and

the at least one second power conversion switch is structured to perform high efficiency power conversion.

11. (Original) The system of claim 1 wherein the at least one first power conversion switch is structured to perform low efficiency power conversion.

12. (Currently amended) The system of claim 1 wherein:
the first ~~module~~ circuitry portion comprises at least two first power conversion switches structured to perform power conversion switching to facilitate conversion of the first power input signal into the first power output signal; and
the second ~~module~~ circuitry portion comprises at least two second power conversion switches structured to perform power conversion switching to facilitate conversion of the second power input signal into the second power output signal.
13. (Original) The system of claim 1 wherein the system is high power.
14. (Original) The system of claim 1 wherein the system is low power.
15. (Original) The system of claim 1 further comprising the core of a central processing unit, wherein the at least one first power conversion switch is operable so that the first power output signal has an adjustable voltage output in the range of about + 0.5 volts to +2.0 volts and is suitable for supporting the core.
16. (Original) The system of claim 15 wherein the at least one second power conversion switch is operable so that the second power output signal has an adjustable voltage output in the range of about + 0.5 volts to +2.0 volts and is suitable for supporting the core.
17. (Original) The system of claim 1 wherein the first power output signal has a voltage of about +5 volts.
18. (Original) The system of claim 1 wherein the first power output signal has a voltage of about +3.3 volts.
19. (Original) The system of claim 1 wherein the first power output signal has a voltage of about +1.8 volts.

20. (Original) The system of claim 1 wherein the first power output signal has a voltage of about +2.5 volts.

21. (Original) The system of claim 1 wherein the first power output signal has a voltage of about +12 volts.

22. (Original) The system of claim 1 wherein the system comprises a bridge between at least one power supply and a central processing unit.

23. (Currently amended) The system of claim 1 further comprising a flip chip style die, including the first ~~module and~~ circuitry portion, the second ~~module~~ circuitry portion, the third circuitry portion, the fourth circuitry portion, and the fifth circuitry portion, wherein the package housing is a flip chip style housing.

24. (Currently amended) The system of claim 1 further comprising at least one semiconductor die, the at least one semiconductor die including the first ~~module and~~ circuitry portion, the second ~~module~~ circuitry portion, the third circuitry portion, the fourth circuitry portion, and the fifth circuitry portion.

25. (Currently amended) The system of claim 1 further comprising a control logic block, located within the package housing, the control logic block being structured and located to at least partially control the operation of the at least one first power conversion switch, ~~and~~ the at least one second power conversion switch, the at least one third power conversion switch, the at least one fourth power conversion switch, and the at least one fifth power conversion switch.

26. (Currently amended) The system of claim 25 further comprising:
 a first switch driver for controlling the position of the at least one first power conversion switch;
 a second switch driver for controlling the position of the at least one second power conversion switch;
a third switch driver for controlling the position of the at least one third power conversion switch;
a fourth switch driver for controlling the position of the at least one fourth power conversion switch;
a fifth switch driver for controlling the position of the at least one fifth power conversion switch;
 a control input / output port, located within the package housing, the control input / output port being structured and located to receive at least one communication signal from outside of the package housing, wherein:
 a mode of the first, ~~and second~~, third, fourth and fifth power conversion switches is determined by the communication signal; and
 the operation of the first, ~~and second~~, third, fourth and fifth switch drivers is controlled by the control logic block based at least in part by the mode.

27. (Original) The system of claim 1 further comprising a control input / output port, located within the package housing, the control input / output port being structured and located to receive at least one communication signal from outside of the package housing.

28. (Original) The system of claim 27 wherein the control input / output port is a serial port.

29. (Original) The system of claim 27 wherein the control input / output port comprises a USB port.

30. (Original) The system of claim 27 wherein the control input / output port comprises an I2C port.

31. (Original) The system of claim 27 wherein the control input / output port comprises a fixed port.

32. (Original) The system of claim 27 wherein the control input / output port comprises a SMBus port.

33. (Currently Amended) The system of claim 1 further comprising:
a computer; and
an on / off control block, located within the package housing, the on / off control block being structured and located to initiate a power up process for the computer.

34. (Original) The system of claim 33 wherein:
the computer comprises an on / off switch; and
the on / off control block comprises an on / off port for interfacing with the on / off switch.

35. (Original) The system of claim 33 wherein the on / off port is designed for ultra-low power consumption when the computer is in a power-off condition.

36. (Original) The system of claim 33 further comprising a computer including an embedded controller, wherein the on / off control block comprises an embedded controller power-up module structured and located to power up the embedded controller.

37. (Original) The system of claim 1 further comprising:

a first battery;

a first battery-charging output, located within the package housing, the first battery charging output having an adjustable voltage and current suitable for charging the first battery;

a first battery current path structured and located to electrically connect the first battery and the first battery-charging output so that the first battery can be charged by electrical power from the first battery-charging output.

38. (Original) The system of claim 37 further comprising a serial battery communication interface, located within the package housing, for communication with the battery.

39. (Original) The system of claim 37 further comprising:

a second battery;

a second battery-charging output, located within the package housing, the second battery charging output having an adjustable voltage and current suitable for charging the second battery;

a second battery current path structured and located to electrically connect the second battery and the second battery-charging output so that the second battery can be charged by electrical power from the second battery-charging output.

40. (Original) The system of claim 1 further comprising:

a transformer suitable for powering a display backlight;

an ac output, located within the package housing, the ac output having adjustable voltage and/or current so that it is suitable for powering the transformer; and

a transformer current path structured and located to electrically connect the transformer and the ac output so that the transformer can be powered by electrical power from the ac output.

Claims 41-46 have been canceled.

Cancel claims 47-54.

55. (New) A power supply system comprising:

a package housing;

a first circuitry portion, located within the package housing, the first circuitry portion comprising at least one first power conversion switch, and being structured, electrically connected and/or programmed to perform power conversion switching to selectively convert at least a first power input signal and a second power input signal into a first power output signal;
and

a second circuitry portion, located within the package housing, the second circuitry portion comprising at least one second power conversion switch, and being structured, electrically connected and/or programmed to perform power conversion switching to selectively convert at least the first power input signal and the second power input signal into a second power output signal;

wherein all power conversion switches required for respectively converting the first and second power input signals into the first and second power output signals are located within the package housing.

56. (New) The system of claim 55 further comprising a third circuitry portion, located within the package housing, the third circuitry portion comprising at least one third power conversion switch, and being structured, electrically connected and/or programmed to perform power conversion switching to selectively convert at least the first power input signal and the second power input signal into a third power output signal, wherein all power conversion switches required for respectively converting the first and second power input signals into the third output signal are located within the package housing.

57. (New) The system of claim 56 further comprising:

a fourth circuitry portion, located within the package housing, the fourth circuitry portion comprising at least one fourth power conversion switch, and being structured, electrically connected and/or programmed to perform power conversion switching to selectively convert at least the first power input signal and the second power input signal into a fourth power output signal; and

a fifth circuitry portion, located within the package housing, the fifth circuitry portion comprising at least one fifth power conversion switch, and being structured, electrically connected and/or programmed to perform power conversion switching to selectively convert at least the first power input signal and the second power input signal into a fifth power output signal; and

wherein all power conversion switches required for respectively converting the first and second power input signals into the fourth and fifth output signals are located within the package housing.

58. (New) The system of claim 55 wherein:

the first circuitry portion is further structured, electrically connected and/or programmed to perform power conversion switching to selectively convert a third power input signal into the first power output signal; and

the second circuitry portion is further structured, electrically connected and/or programmed to perform power conversion switching to selectively convert the third power input signal into the second power output signal.

59. (New) The system of claim 58 further comprising:

a third circuitry portion, located within the package housing, the third circuitry portion comprising at least one third power conversion switch, and being structured, electrically connected and/or programmed to perform power conversion switching to selectively convert at least the first power input signal, the second power input signal and the third power input signal into a third power output signal;

a fourth circuitry portion, located within the package housing, the fourth circuitry portion comprising at least one fourth power conversion switch, and being structured, electrically connected and/or programmed to perform power conversion switching to selectively convert at least the first power input signal, the second power input signal and the third power input signal into a fourth power output signal; and

a fifth circuitry portion, located within the package housing, the fifth circuitry portion comprising at least one fifth power conversion switch, and being structured, electrically connected and/or programmed to perform power conversion switching to selectively convert at least the first power input signal, the second power input signal and the third power input signal into a fifth power output signal; and

wherein all power conversion switches required for respectively converting the first, second and third power input signals into the third, fourth and fifth output signals are located within the package housing.

60. (New) A module comprising the following:

- an AC adapter input circuitry structured, electrically connected and/or programmed to accept a first power input signal from an AC adapter;
- a first battery input circuitry structured, electrically connected and/or programmed to accept a second power input signal from a first battery;
- a second battery input circuitry structured, electrically connected and/or programmed to accept a third power input signal from a second battery;
- a first switching power converter structured, electrically connected and/or programmed to convert an input power signal into a first power output signal;
- a second switching power converter structured, electrically connected and/or programmed to convert an input power signal into a second power output signal;
- a third switching power converter structured, electrically connected and/or programmed to convert an input power signal into a first power output signal;
- a power converter switch controller structured, electrically connected and/or programmed to control the power conversion related switching of the first switching power converter, the second switching power converter and the third switching power converter;
- an input power controller structured, electrically connected and/or programmed to select among at least the first power input signal, the second power input signal and the third power input signal to form the power input signal received by the first switching power converter, the power input signal received by the second switching power converter circuit, and the power input signal received by the third switching power converter; and
- a power distribution controller structured, electrically connected and/or programmed to control distribution of at least the first power output signal, the second power output signal and the third power output signal to external loads.

61. (New) The module of claim 60 wherein all power conversion switches of the module are located within a single package housing.

62. (New) The module of claim 60 wherein all components of the module are located within a single package housing.